National Transportation Safety Board
Washington, DC 20594

Brief of Accident

Adopted 11/25/2003

IAD02LA080
File No. 14278 | 08/01/2002 | Patuxent River, MD | Aircraft Reg No. N1177M | Time (Local): 14:20 EDT

Make/Model:	Cessna / 172K
Engine Make/Model:	Lycoming / O-320
Aircraft Damage:	Substantial
Number of Engines:	1
Operating Certificate(s):	None
Type of Flight Operation:	Personal
Reg. Flight Conducted Under:	Part 91: General Aviation

	Fatal	Serious	Minor/None
Crew	0	1	0
Pass	0	0	1

Last Depart. Point:	Myrtle Beach, SC
Destination:	Same as Accident/Incident Location
Airport Proximity:	On Airport
Airport Name:	Patuxent River NAS
Runway Identification:	06
Runway Length/Width (Ft):	11809 / 200
Runway Surface:	Grass/turf
Runway Surface Condition:	Dry

Condition of Light:	Day
Weather Info Src:	Weather Observation Facility
Basic Weather:	Visual Conditions
Lowest Ceiling:	None
Visibility:	7.00 SM
Wind Dir/Speed:	040 / 009 Kts
Temperature (°C):	34
Precip/Obscuration:	None / None

Pilot-in-Command Age: 28

Certificate(s)/Rating(s)
Commercial; Single-engine Land; Helicopter
Instrument Ratings
Airplane; Helicopter

Flight Time (Hours)

Total All Aircraft:	815
Last 90 Days:	46
Total Make/Model:	9
Total Instrument Time:	UnK/Nr

Prior to his departure, the pilot performed a preflight inspection and determined the fuel onboard the airplane by observing the fuel gauges in the cockpit. The gauges indicated the fuel tanks were about 1/4 - 1/2 full, or 8 gallons of fuel per tank. The pilot stated he did not visually check the fuel tanks because he did not have a way to measure the fuel. The pilot added 20 additional gallons of fuel, for a total of 36 gallons of fuel onboard, which he estimated to be 4 1/2 hours flight time. After fueling the airplane, the fuel gauges read about 3/4 full on each tank. The pilot flew direct to his destination; however, he did not perform any fuel burn calculations en route. Approximately 3 miles from the airport, the airplane's engine lost power. The pilot checked the fuel gauges, which indicated 1/8 full on the left side and 1/4 full on the right side. He unsuccessfully attempted to restart the engine, and performed a forced landing approximately 1/2 mile short of the runway. Examination of the airplane revealed that the left wing tank was completely empty and 1/8 inch of fuel remained in the right wing tank. The airplane's fuel system was examined and no pre-impact anomalies were noted. A test run of the engine was performed on the airframe, and it started without hesitation and ran continuously through a variety of power settings. An accurate test of the fuel level transmitters and fuel gauges was unable to be performed during the initial examination, because they were removed and retained by the operator. The pilot had accumulated 124 hours of fixed-wing flight experience, 9 of which were in make and model, and 691 hours in rotorcraft.

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Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: APPROACH

Findings
1. FLUID,FUEL - EXHAUSTION
2. (C) FUEL SUPPLY - INADEQUATE - PILOT IN COMMAND
3. (C) FUEL CONSUMPTION CALCULATIONS - INADEQUATE - PILOT IN COMMAND

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
4. TERRAIN CONDITION - GROUND

Occurrence #4: GEAR COLLAPSED
Phase of Operation: EMERGENCY LANDING

Findings Legend: (C) = Cause, (F) = Factor

The National Transportation Safety Board determines the probable cause(s) of this accident as follows.
The pilot's inadequate fuel calculations, which resulted in fuel exhaustion and a subsequent loss of engine power.